



MSAPC ADVISORY CIRCULAR

U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF AIR AND WASTE MANAGEMENT ●

MOBILE SOURCE AIR POLLUTION CONTROL

A/C NO. 41-A

March 24, 1975

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SUBJECT: Changes to a Vehicle or Engine Covered by Certificate
(Running Changes)

A. Purpose

The purpose of this Advisory Circular is to (1) set forth EPA's interim policy regarding the reporting of running changes under 40 CFR 85.075-33, 85.175-33, 85.275-33, 85.774-33, 85.874-33, and 85.974-33, (2) indicate which vehicle/engine components or specifications when changed require reporting to EPA as running changes, and (3) indicate which running changes will normally require emission testing prior to EPA approval. Advisory Circular No. 41 is obsolete and should be discarded.

B. Applicability

The provisions of this Advisory Circular are effective immediately, beginning with the 1975 model year, and are applicable to light duty gasoline-fueled motor vehicles, light duty diesel motor vehicles, light duty trucks, light duty diesel trucks, heavy duty gasoline engines, and heavy duty diesel engines. This Advisory Circular may also be used as a guideline for reporting field fixes as outlined in MSAPC Advisory Circular No. 2B (Subject: Field Fixes Related to Emission Control-Related Components), dated March 17, 1975.

To simplify the format of this Advisory Circular, references to the Federal Register will only be given for 40 CFR Part 85, Subpart A. Interested parties should consult the corresponding sections in Subparts B, C, D, H, I, and J applicable to light duty diesel motor vehicles, light duty trucks, light duty diesel trucks, heavy duty gasoline-fueled engines, and heavy duty diesel engines, respectively.

C. Background

1) There has in the past been some confusion on the type of change required to be reported. This has resulted from the general nature of the items listed in 40 CFR 85.075-5 which must be reported. Thus manufacturers have not interpreted uniformly what constitutes a change requiring reporting to EPA under 40 CFR 85.075-33.



2) Because of these varying interpretations concerning the reporting of changes to a vehicle or engine covered by a certificate, Advisory Circular No. 41 was issued on April 9, 1974, to more fully articulate EPA's interpretation of the running change reporting requirements.

3) On December 23, 1974, EPA published a Notice of Proposed Rulemaking in the Federal Register (39 F.R. 44246) which would formally specify EPA's interpretation of the running change requirements. In the interim period prior to the promulgation of final rulemaking in this area, this Advisory Circular is issued to provide guidance to manufacturers on what constitutes a running change under the present regulations (40 CFR 85.075-33).

4) Since Advisory Circular No. 41 was issued, several questions regarding the scope of Attachment A have been raised. Such questions have caused EPA to review Attachment A. A/C 41-A is issued to delete those items from Attachment A which are not expressly covered by the running change reporting requirements (i.e., type of cylinder head, combustion chamber configuration, intake and exhaust valve characteristics, exhaust system, and tire size and type).

D. Discussion

In view of the many different emission control systems and components used by various manufacturers, it would be an impossible task to list in detail every part, component or specification which, when changed, would affect emissions. Attachment A is intended to provide manufacturers with greater guidance as to components and specifications which, when changed, must be reported to EPA as running changes under 40 CFR 85.075-33. A majority of the entries contained in Attachment A are specifically covered in the application for certification but there are also items which are not contained in the application for certification.

E. Reporting Requirement

1) A report requesting approval for a running change is required under 40 CFR 85.075-33 whenever any of the items in Attachment A are changed. Any changes to the listed items must be reported even if, in the manufacturer's opinion, based on his technical judgement, emission test results or other reason, the change will not affect emission performance or deterioration.

2) In addition, a report to EPA is required for changes to any other components, parts, or specifications which, in the manufacturer's judgment, may affect emission performance or deterioration even if they are not included in Attachment A of this Circular.

3) Requests for approval to perform running changes shall be submitted in duplicate (as well as two copies of any changes to the Part I Application for Certification that may be required) to:

Chief, Certification Branch
Certification & Surveillance Division
Mobile Source Air Pollution Control
U.S. Environmental Protection Agency
2565 Plymouth Road
Ann Arbor, Michigan 48105



F. Time of Notification

All running change notifications must be in advance of the change unless the manufacturer elects to follow the procedure described in 40 CFR 85.075-34. In evaluating whether an addition or change will not require testing, the manufacturer should consider those items listed in Attachment A.

G. Testing Requirements

Depending on the type of change involved, approval of a manufacturer's request to make a running change may need to be based upon emission test data. Such data as is available to the manufacturer may be provided by the manufacturer at the time he submits the request. However, EPA may specify that additional emission testing be performed, either by the manufacturer at his facility or at the EPA Laboratory in Ann Arbor.

Examples of running changes, the approval for which will generally not require the submission of emission test data, are:

1) Changes to part numbers or identification codes which are not the result of some physical or operational modification, specification revision, or material changes. For example, a change in the part number of an engine might indicate the particular degree to which it is assembled at some point in the production process.

2) Changes to components on a particular engine or vehicle which are already used on another similar vehicle presently covered by a certificate of conformity. For example, a manufacturer might propose to change the standard axle ratio of a particular model vehicle, and another similar (i.e., same engine family, control system, engine code, transmission, inertia weight, etc.) vehicle already covered by a certificate of conformity uses the proposed axle ratio, either as a standard or an optional ratio.

3) Changes to a particular engine or vehicle which, on the basis of engineering evaluation by EPA technical staff, are judged unlikely to adversely affect the exhaust or evaporative emission levels of the vehicle or engine.

4) Changes to components or devices which may reasonably be expected to affect emissions only under operational modes not included in the FTP. For example, a change to a catalyst bypass which raises the activation point from 60 mph to 65 mph would not generally require emission test data for approval.

Eric O. Stork
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ATTACHMENT A

Changes to a Vehicle or Engine
That Must Be Reported

A. Basic Parameters

1. Cylinder bore center-to-center dimensions
2. Centerline of crankshaft to centerline of camshaft dimension
3. Centerline of crankshaft to top of cylinder block head face dimension
4. Cylinder block configuration
5. Valve head diameters
6. Valve location
7. Combustion cycle
8. Method of air aspiration

B. Secondary Parameters

1. Displacement
2. Bore and stroke
3. Number of cylinders
4. Compression ratio
5. Surface to volume ratio
6. Intake port area at cylinder head and manifold mating surface
7. Exhaust port area at cylinder head and manifold mating surface
8. Intake manifold configuration
9. Exhaust manifold configuration
10. Fuel system



- a. Carburetion
 - i. Number of carburetors
 - ii. Type
 - iii. Number of venturis
 - iv. Venturi diameter
 - v. Maximum air flow
 - vi. Fuel metering system
 - vii. Enrichment system
 - viii. Idle stop
 - ix. Choke system
- b. Fuel injection
 - i. Control parameters
 - ii. Basic type (mechanical, electronic, timed, continuous, etc.)
 - iii. Point of injection
 - iv. Maximum air flow
 - v. Cold start enrichment system
 - vi. Fuel rates
 - vii. Injection timing
- c. General
 - i. Tanks
 - ii. Lines
 - iii. Restrictions
 - iv. Pump
 - v. Control valves
- 11. Idle speed and setting procedure
- 12. Idle mixture and setting procedure
- 13. Air inlet system
 - a. Air cleaner type
 - b. Air cleaner restriction
 - c. Air inlet temperature control system
- 14. Ignition system
 - a. System
 - b. Basic ignition timing and dwell
 - c. Advance mechanism
 - d. Advance curve
 - e. Spark plug



- i. Heat range
 - ii. Gap
 - iii. Tip configuration
- f. Ignition wire material (core, insulation)
- 15. Camshaft timing
 - a. Cam profile
 - b. Rocker arm ratio
 - c. Tappets
- 16. Crankcase emission control system
- 17. Exhaust emission control system
 - a. Engine modification
 - b. Air injection
 - c. Exhaust gas recirculation
 - d. Thermal reactor
 - e. Catalytic converter
- 18. Evaporative emission control system
 - a. Location of components on vehicle
 - b. Control valves
 - c. Purge system
 - d. Flow restrictions
 - e. Filler cap configuration
 - f. Filler neck constrictor (unleaded fuel only)

C. Engine Usage

- 1. Model
- 2. Transmission
 - a. Type (man. or auto.)
 - b. Drive gear ratios
- 3. Inertia weight (curb weight)
- 4. Axle ratio
- 5. N/V (Engine rpm in high gear)
vehicle mph

- D. Any changes to components or specifications which are not specifically described in the Application for Certification, as detailed above, that determine or affect the temperature, composition, or timing of the inlet charge (i.e., air/fuel/oil/exhaust mixture) or which affect the speed and/or load at which the engine operates, are of special interest to EPA. Manufacturers should use every available means (including testing) to assure themselves that such changes do not cause vehicles to exceed emission standards.